World Applied Sciences Journal 37 (7): 584-591, 2019
ISSN 1818-4952

DOI: 10.5829/idosi.wasj.2019.584.591

Losses of Central Banks as a Result of Inadequate Assets and Liabilities Management

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Abstract: It is widely known that the activities of central banks affect the overall production, inflation and stabilization of each country's economic and state activities. This paper shows how, in 2017, some central banks of the of the Central Bank of Europe from the given sample achieved high negative financial results through their activities. The balances of these banks showed that the causes that led to such high losses were speculative transactions and that the banks did not know or were unable to hedge against financial risks, the most common ones being: interest rate risk, foreign exchange risk, liquidity risk and credit risk. The solution to the problem of losses is to cover open positions of liabilities with open positions of bank assets, that is, to develop a strategy for managing assets and liabilities of the bank, i.e. establish control of the balance sheet of the central bank. Had they done so, the central banks of the said countries would have shown that they were worthy of the tasks ahead of them, because today they bear a responsibility they never had before.

Key words: Central bank · Exchange difference · Balance sheet · Loss
JEL Category: F1, F14, F32, F41

INTRODUCTION

This research was created as the result of observing operations of individual central banks of Europe (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Romania, Bulgaria, Montenegro and Albania). Some of these banks or their countries already belong to the European Union (EU) and thus to the European Central Bank (ECB), while the other central banks and their countries are pending;these are the so-called catching up countries, which are also geographically located in Europe but are waiting to be admitted to the European Union. All of these central banks have both positive and negative financial results, that is, profits and losses in their business, which is determined in the chapters regarding the description and definition of the problem and the state of the situation, while through the chapters, case studies and solutions to the problem, some possible solutions have been given to protect or hedge the bank against certain business risks in order to avoid some future losses in the operations of these central banks.

Description of the Problem: Central banks are the most important, umbrella institutions in each country's financial system. The activities they take, which fall under the monetary policy of a country, have a direct impact on: money supply, interest rates and loan volume. Indirectly, the activities of central banks affect: the total production, inflation and stabilization of each country's economic and state activities. In other words, having more knowledge of how macroeconomics work can improve monetary policy performance [1]. The practical experience of a great number of countries indicates that there are two forms of central bank. The first one is fully dependent on the executive, meaning that it implements monetary and credit policies and is characteristic of developing countries. The other one rests on high independence and institutional autonomy over the country's executive. This form is characterized by greater accountability, as the bank is directed to market mechanisms for creating the amount of money in circulation and to the mechanism of monetary credit policy. This form of central bank is characteristic of highly developed countries [2].

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Advocates of central bank autonomy and independence believe that macroeconomic performance improves with greater central bank independence and that when central banks are ranked from the most independent to the most independent, one can see that inflation control is best in countries with the most independent central banks [3]. The independence of the central bank also determines its economic sovereignty, that is, the economic sovereignty of a country is also determined by its monetary sovereignty, which is reflected by the application of the appropriate monetary, currency and foreign exchange system [4]. However, by analyzing the content of central bank operations, it was found that there were significant differences in the performance of operations in certain countries. In some countries, borrowing from the central bank is a side effect, while in other countries it is a source of liquidity that the banking system counts on. Some countries have a highly developed financial market and others do not, so the supply and demand of funds is influenced by the central bank. In some countries, the law excludes the possibility of lending to the government by the central bank[1], while in other countries, the central bank is authorized to finance state institutions. Almost half of the central banks aforementioned in this paper belong to the countries that are members of the European Union and, as a rule, are also members of the European Central Bank (ECB) and the European System of Central Banks (ESCB), which today operate in a monetary policy and which are modeled on the US Federal Reserve, except that in the ECB monetary operations are not as centralized as in the US and the supervision and regulation of financial institutions is left to certain countries within the European Monetary Union [5]. In such conditions and regardless of which of the above forms they belong to, mentioned central banks from the sample, through their monetary policy, produce both positive and negative consequences in the country and society in general. However, there is research and evidence of positive net benefits from these banks' ECB membership [6], as well as studies on the negative consequences for which central banks are responsible. These are certainly speculative transactions in which the countries themselves are often the largest foreign exchange speculators, because they very often borrow in dollars, but rarely hedge, i.e. protect themselves against negative exchange rate differences or losses, so in many countries public debt often depends on the dollar exchange rate. When it comes to the countries from the selected sample (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Romania, Bulgaria, Montenegro and Albania) and their central banks, the facts tell us that most of these countries suffer from the same type of disease, namely foreign debts or liabilities to foreign creditors who are in the structure of sources of funds or liabilities of the balance sheet of central banks, are the main "culprits" of losses of central banks of several countries in 2017 (Serbia, Croatia, Macedonia, Albania and Bulgaria).

Definition of the Problem: Central banks, by default, hold most of their assets in foreign currency, thus being exposed to foreign exchange risk in terms of fluctuations in the domestic currency against the euro and the US dollar, which ultimately affects the profit and loss account and, consequently, their financial performance. Most of the Western Balkans' central banks recorded losses in business in 2017. By far, the biggest loss in that year was recorded by the Central Bank of Serbia, in the amount of € 697.7 million. Net interest income of € 33 million and commission of € 29 million were nowhere near enough to cover the expenses, so the loss made was more than four times higher than the Central Bank of Serbia's revenue. At the same time, the loss of the Central Bank of Croatia amounts to € 339 million and is also more than four times higher than the revenue generated that year. The Central Bank of Macedonia recorded a loss of € 117 million, more than eight times higher than the revenue generated. The Central Bank of Albania recorded a loss of approximately € 114 million, which is also more than four times higher than the revenue generated, as did the Central Bank of Bulgaria with a loss of approximately € 110 million (Table 1). Therefore, since the losses in the operations of these central banks are evident and different in structure and size, the definition of the problem is: “The losses incurred by the aforementioned central banks are the result of inadequate management of the bank's assets and liabilities“. A derivative problem might be: “The fall in the value of securities in the financial markets and the fall in the value of the world's most important currencies and the inability or ignorance of central banks from the sample to protect them in a better way, are the result of the work of these banks in 2017”.

[1]According to the Law on the Central Bank of Bosnia and Herzegovina enacted in 1977, the Central Bank of Bosnia and Herzegovina cannot provide loans on the basis of money creation and therefore functions as a "currency board", whose primary task is to maintain the stability of the domestic currency (convertible mark).

Table 1: Income statement of Western Balkan countries in 2017[2]

In 000 EUR on 31 December 2017	BiH	Serbia	Croatia	Slovenia	Macedon	Montene	Romania	Albania	Bulgaria
Interest income	14,813	73,444	92,040	114,368	5,265	3,024	46,180	21,695	162,672
Effects of negative interest rates	(5,857)	(40,178)	(22,184)	(9,245)	(15,623)		(102,885)	(6,402)	(36,565)
Effects of negative deposit interest rate from banks	2,260								
NET INTEREST INCOME	11,216	33,266	69,856	105,123	(10,358)	3,024	(56,705)	15,293	126,107
Fee and commission income	8,085	38,053	6,594	11,172	4,748	10,526	28,004	596	3,784
Fee and commission expenses	(287)	(8,578)	(2,559)	(2,845)	(576)	(128)	(6,054)	(381)	(2,367)
NET FEE AND COMMISSION INCOME	7,798	29,475	4,035	8,327	4,172	10,398	21,950	215	1,417
Net gains from sale of financial assets	1,321	(56,874)	(14,418)	53,956	3,156	(58)	36,705	(1,787)	18,795
Net foreign exchange (losses) / gains	(286)	(715,521)	(353,605)	(56,796)	(108,850)	(656)	321,549	(119,336)	(204,286)
Other income	797	106,128	841	(2,364)	7,083	989	(163,019)	10,605	
OPERATING INCOME	20,846	(603,526)	(293,291)	108,246	(104,797)	13,697	160,480	(95,010)	(57,967)
Personnel expenses	(9,712)	(36,996)	(46,085)	(22,780)	(6,835)	(7,957)	(69,882)	(10,374)	
Administrative and other operating expenses	(3,872)	(14,117)	(336)	(7,653)	(4,147)	(3,012)	(36,799)	(4,854)	(52,199)
Depreciation and amortisation	(1,039)	(43,337)		(7,095)	(1,186)		(13,775)	(3,614)	(644)
OPERATING EXPENSES	(14,623)	(94,450)	(46,421)	(37,528)	(12,168)	(10,969)	(120,456)	(18,842)	(52,843)
NET PROFIT FOR THE YEAR	6,223	(697,976)	(339,712)	70,718	(116,965)	2,728	40,024	(113,852)	(110,810)

Statement of the Situation: The statement of the situation regarding the monetary policies of the Western Balkan countries' central banks is related to the structure of the balance sheet and the assessment of the demand for money as a prerequisite for the monetary authorities to devise an effective monetary policy [7]. However, although the monetary policy literature has focused on developed countries, there have been relatively few studies that have examined the function of monetary policy in transition economies, especially in the Western Balkans. Mostly present on the scene today are unconventional methods regarding monetary policies followed by central banks, in addition to major approaches and including targeted inflation as well as Tailor's rules [8]. Accordingly, these approaches not only focus on the causes of inflation or the creation of policy proposals for achieving price level stability, but they can also be taken as an assessment of the state of monetary rules' implementation in the Western Balkans. In other words, unconventional monetary policy means the expansion of central bank lending in order to offset private financial intermediation distortions. In our framework, the central bank is less efficient in lending than private intermediaries, but has the advantage of being able to resiliently obtain funds by issuing sovereign debt without risk [9].

Table 1 shows the the financial results of the selected central banks, where it is noted that five out of nine banks showed negative financial results and that the largest loss was recorded in the Central Bank of Serbia. The question is how did that bank manage to make such a big loss in one year? How did it "succeed" to reduce the assets of the Central Bank of Serbia, i.e. the assets of the Serbian government, by about _ 700 million? The answer lies in both the funds and the liabilities these banks, that is, in the structure of foreign sources of funds, or in the structure of liabilities and assets of the bank and the way they are managed. How the funds and sources of funds were managed is shown by the results or by the losses realized in 2017, indicating that they were not properly managed because most of these banks did not have an adequate asset and liability management strategy that would allow them to protect their assets without the loss.

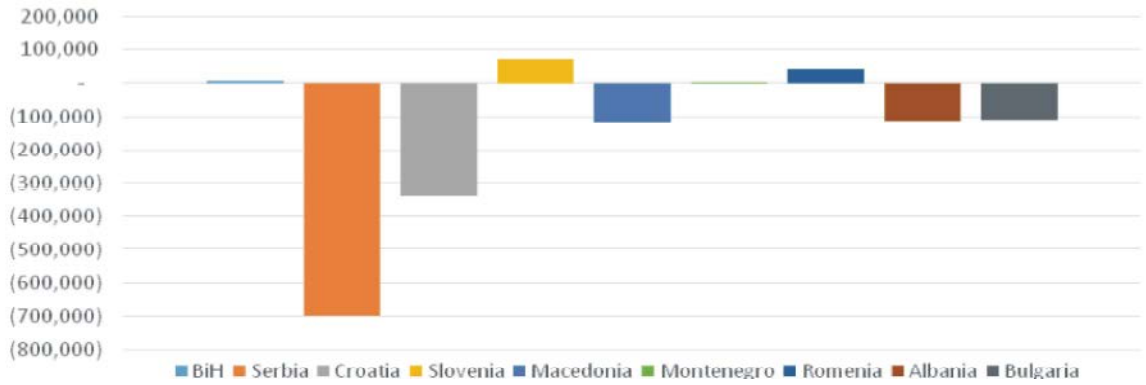
The structure of the liabilities of the Central Bank of Serbia comprised of money in circulation or money issued, in the amount of 16%, while the remaining 84% consists of someone else's liabilities. It is therefore money from commercial banks, the government and other depositors. How did such a loss occur? It occurred exactly from liabilities to foreign sources of funds (the government and foreign creditors) but also from its own foreign currency assets after determining its fair value. In particular, the Central Bank of Serbia recorded a loss in 2017 on three grounds:

- Net loss based on the change in the fair value of coupon and discount securities in the amount of RSD 5.4 billion, due to the decline in prices in EUR, USD, CAD and GBP in its portfolio and

[2]Taken from the Western Balkan central bank's annual reports for 2017.

Table 2: Balance Sheet of Western Balkan countries[3]

In 000 EUR on 31. December 2017.	BiH	Serbia	Croatia	Slovenia	Macedon	Monten	Romania	Albania	Bulgaria
ASSETS									
Foreign currency in cash	120,870	1,774,052	2,627,531	2,397	3,518	243,825	9,980	-	10,711,472
Deposits with foreign banks	1,379,798	1,379,519	321,662	1,141,600	362,558	223,312	9,668,186	1,285,073	1,089,894
SDR in IMF	783	847,498	1,223,756	337,790	4,119	93,262	1,173,382	331,530	
Financial assets available-for-sale	3,171,068	6,224,515	3,722,500	1,644,169	1,724,746	338,758	21,489,151	1,949,277	11,430,073
Monetary gold	104,256	681,742	-	110,584	239,144	3,350	3,846,474	57,920	1,424,381
Held-to-maturity investments	620,740	25,548	2,642,349	10,656,457	93,790	52,581	780,450	113,123	
Other assets	5,959	41,747	3,681,944	-	177,149	2,860	413,817	18,676	
Property and equipment	23,246	174,730	77,720	37,009	13,202	24,025	283,287	160,677	79,777
Intangible assets	548	949	-	-	612	19	-	-	2,263
Other investments	14,220	9,672	3,643,050	568,198	6,257	4,396	4,590,455	316,740	42,050
TOTAL ASSETS	5,441,488	11,159,972	17,940,512	14,498,204	2,625,095	986,388	42,255,182	4,233,016	24,779,910
LIABILITIES, EQUITY AND RESERVES									
Currency in circulation	2,208,454	1,383,817	4,215,406	5,285,783	588,235	93,450	15,749,775	2,182,118	8,029,451
Deposits from banks	2,573,365	4,088,196	10,121,759	2,938,810	536,573	785,692	14,007,644	1,409,430	7,103,592
Deposits from the Government	319,408	2,266,011	392,260	2,531,394	1,321,931	41,152	8,805,870	280,386	5,621,320
Provisions for liabilities and charges	843	4,134	93,853	608,321	3,259		-	-	-
Other liabilities	5,733	899,829	1,220,995	2,146,012	6,442	576	12,952	3,845	1,792,803
Total liabilities	5,107,803	8,641,987	16,044,273	13,510,320	2,456,440	920,870	38,576,241	3,875,779	22,547,166
Initial capital	12,782	1,444,458	332,536	8,346	20,949	43,000	6,430	19,860	10,226
General reserves (Retained earnings)	277,511	1,775,339	1,563,703	908,826	21,304	5,107	490,737	337,377	2,222,518
Other reserves	16,003	(701,812)		70,712	7,819	263	3,181,775	-	
Fair value reserves	27,389				118,583	17,148		-	
Total equity and reserves	333,685	2,517,985	1,896,239	987,884	168,655	65,518	3,678,942	357,237	2,232,744
TOTAL LIABILITIES AND EQUITY	5,441,488	11,159,972	17,940,512	14,498,204	2,625,095	986,388	42,255,183	4,233,016	24,779,910



Graph 1: Net Profit for the 2017

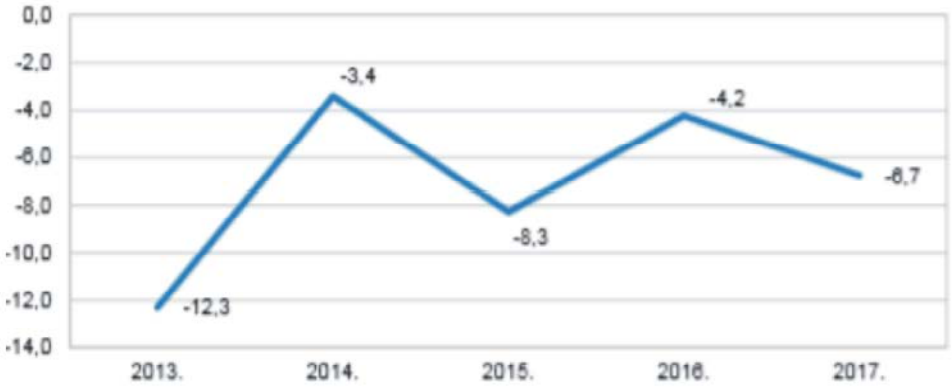
- Net loss based on sale of these securities in the amount of RSD 1.3 billion“ [4].

The third, the largest source of loss of the Central Bank of Serbia, also represents the influence and movement of exchange rates, primarily EUR and USD, as well as the movement of precious metals, primarily gold. Thus, on that basis, the Central Bank of Serbia recorded a net outflow of foreign exchange losses and effects of the contracted currency clause in the amount of RSD 84.8 billion, which is more than the total loss reported.

Following the offset of revenue and expenses, the Central Bank of Serbia in 2017 reported a large operating loss in the amount of RSD 83.1 billion (approximately EUR 700 million), which was covered by bank reserves formed in previous years. The aforementioned loss significantly reduced the total assets of the Central Bank of Serbia, i.e. the balance sheet decreased significantly and shows that in the structure of funds, the largest part of total funds relates to foreign reserves (89.3%), consisting of: cash and current accounts with banks, deposits with banks, gold and other precious metals, financial assets at fair

[3]Taken from the selected central bank's annual reports for 2017.

[4]Annual Report on Activities and Results for 2017, National Bank of Serbia, pp: 161



Graph 2: Net losses from changes in the fair value of securities in RSD billion[5]

Graph 3: Exchange differences and loss[6]

value intended for trading and assets in SDRs. Also, the bank's liabilities decreased, i.e. the bank's capital decreased significantly, while the liabilities remained at fair value, relating to: liabilities to banks, government and other depositors based on transaction and other deposits in dinars and foreign currency, liabilities to the IMF and liabilities to cash-in-circulation transactors.

The Central Bank of Croatia recorded a loss of approximately EUR 339 million, which is also a high level of loss, however, comparing it with the loss and the value of the balance sheet of the Central Bank of Serbia, we note that the loss is much smaller. However, when looking at the structure of the sources of funds of these two banks, it is easy to see that the capital of the Central Bank of Serbia is larger than the capital of the Central Bank of Croatia and that the source structure is less favorable with the Central Bank of Croatia, that is, that this bank has a higher level of balance sheet, but also larger foreign sources and higher debt ratio than the Central Bank of Serbia. Still, since the Central Bank of Croatia has larger debts and incurred a smaller loss, this further means that the reported loss in both banks does not depend on the total level of debts but on the structure there of. Since these debts, i.e.the structure of the source of funds, clearly have higher liabilities to creditors (domestic and foreign banks) than to the country, it is then logical that the loans withdrawn from these banks caused huge exchange losses due to the depreciation of the domestic currency in relation to the currency in which the loans were withdrawn (US$, EUR). Therefore, it is necessary to find the ratio of losses and part of the structure of liabilities, that is, the structure of foreign sources of funds of the Western Balkans' central banks. This looks as follows:

Table 3 shows that the central banks with the highest level of liabilities or foreign sources of funds do not necessarily produce the largest losses of those banks.

[5]Taken from: Annual Report on Activities and Results for 2017, National Bank of Serbia, pp: 161.
[6]Taken from: Annual Report on Activities and Results for 2017, National Bank of Serbia, pp: 163.

Table 3: Derived table of share of loss in foreign sources of funds

Country	Losses	∑ Liabilities	% 2/3
1	2	3	4
Serbia	697,976	8,641,987	8.1
Croatia	339,712	16,044,273	2.1
Macedonia	116,965	2,456,440	4.8
Albania	113,852	3,875,779	2.9
Bulgaria	110,810	22,547,166	0.5

Table 4: Derivative table of foreign exchange differences by currencies[7]

Croatia	EUR	USD	XDR	Other	HRK	Ukupno
Assets %	78.67	12.69	6.82	0.01	1.81	100
Laibilities %	15.32	1.28	7.62	0.02	75.76	100
Difference "+-"	63.35	11.41	-0.8	-0.01	-73.95	0

Croatia	EUR	USD	XDR	Other	RSD	Ukupno
Assets %	54.94	31.11	9.07	3.77	1.11	100
Laibilities %	29.17	0.64	9.83	0.09	60.27	100
Difference "+-"	25.77	30.47	-0.76	3.68	-59.16	0

The Central Banks of Bulgaria and Croatia are more indebted than the Central Bank of Serbia, but regardless of this fact they have recorded significantly smaller losses than the Central Bank of Serbia, which is twice less indebted than the Central Bank of Croatia and almost three times less than the Central Bank of Bulgaria. Therefore, it comes down to the structure of the bank's debt, that is, whether and in what currency the banks are exposed to foreign creditors.

Table 4 shows that in the Central Bank of Croatia, debt to the government and in local currency is much higher than foreign debt denominated in foreign currency. This ratio is approximately 75:25, while in Serbia the same ratio is 60:40 in favor of liabilities to the government. This means that Serbia has more significant foreign currency exposure compared to Croatiaand is therefore subject to enormous foreign exchange gains greater than the total loss of the Central Bank of Serbia.

At the same time, the Central Bank of Serbia also lost in active open positions of the balance sheet as there was a decline in the value of securities it holds in its portfolio. Overall, all central banks are exposed to the effects of developments on the international financial market and above all to the changes in yields and, consequently, changes in the market value of securities in both assets and liabilities of the balance sheet. Balance sheet exposure arises from the application of the accounting concept of 'fair value'[8] in valuing financial assets and recognizing gains or losses on that basis in the income statement.

Possibility of Solving the Problem: It is obvious that central bank balances are from the sample show that the causes that led to such high losses are primarily speculative transactions, i.e. the fact that banks often borrow in dollars and that they do not know or are unable to hedge against the financial risks, the most common ones being: credit risk, liquidity risk, interest rate risk and foreign exchange risk. Likewise, central banks hold in their assets the funds that are subject to or sensitive to the exchange rate of certain currencies at a certain point, thus producing a large portion of the bank's losses. The best hedge is certainly to match the currency structure of the assets with the expected foreign currency liabilities, that is, open positions in the liabilities of the central bank should be covered with open positions in the bank's assets. This means that control on the central bank's balance sheet should be established, that is, it is

[7]Annual report 2017, National Bank of Croatia, p. 181., Annual Report on Activities and Results for 2017, National Bank of Serbia, pp: 172.

[8]The fair value of quoted financial assets is determined based on the current market value. In the case of financial instruments for which there is no active market (not quoted) and whose fair values cannot therefore be determined on the basis of the current market value, the National Bank of Serbia makes an assessment of their fair value by using information on recent market transactions with these instruments, using the discounted cash flow method or using the option pricing model.

necessary to develop a strategy for managing the central bank's balance sheet or, more specifically, a strategy for managing the bank's assets and liabilities [10] emphasizing the key goals, such as:

- The management of the bank must have as much control over the quantity, mix and return or costs and assets and liabilities as possible in order to achieve the short and long term goals;
- Control of asset management must be coordinated with liability control so that asset and liability management is consistent and not contradictory and.
- Revenues and expenses arise on both sides of the bank's balance sheet (both assets and liabilities) so the central bank must develop policies that maximize returns and minimize costs.

Regardless of which asset and liability management strategy will be applied, no bank can completely avoid these risks, which is why the task that central banks have today became extremely undesirable, not only because the environment has become extremely skeptical and suspicious of institutions, but also because they have to rely on unexplored strategies and new technologies. Like many times in the past, central banks must meet the needs of the moment and prove that they are worthy of tasks they have never faced before. Today, central banks have a responsibility they have never had before and so it would not be wise to miss the opportunity to begin exploring these new frontiers of the central bank's operational reach.

CONCLUSION

Activities undertaken by central banks that fall under the monetary policy of a country directly affect: money supply, interest rates and the credit volume. Indirectly, the activities of central banks affect: the total production, inflation and stabilization of each country's economic and government activities. In such conditions, central banks, through their monetary policy, produce negative consequences in the country and society in general, which are reflected in speculative transactions and result in losses because these transactions are not hedged, that is, they are not protected against negative exchange rate differences or losses. Some countries in Europe (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Romania, Bulgaria, Montenegro and Albania) and their central banks "suffer" from the same type of disease, i.e. foreign debts or liabilities to foreign creditors who are in the structure of sources of funds, that is, in liabilities of the balance sheet and are the main "culprits" of certain recorded losses of central in 2017. Likewise, central banks hold in their assets the funds that are subject to or sensitive to the exchange rate of certain currencies at a certain point, thus producing a large portion of the bank's losses. The best hedge is certainly to match the currency structure of the assets with the expected foreign currency liabilities, that is, open positions in the liabilities of the central bank should be covered with open positions in the bank's assets. The solution is therefore to harmonize foreign currency assets and liabilities, that is, to cover open positions of central bank liabilities with open positions of bank assets. This means that control on the balance sheet of the central bank should be established, that is, it is necessary to develop a strategy for managing the balance sheet of the central bank, or more specifically, a strategy for managing the assets and liabilities of the bank. Central banks need to meet the needs of the moment and prove that they are worthy of tasks they have never faced before, because they carry a responsibility they have never had before and therefore it would not be wise to miss the opportunity to begin exploring these new frontiers of operational reach of central banks.

REFERENCES

1. Richard Clarida, J.G., 1999. The Science of Monetary Policy: A New Keynesian Perspective. Journal of Economic Literature, XXXVII: 1661-1707.
2. Vunjak, N.L.K., 2006. Bankarstvo. Subotica: Proleter Beèej.
3. Summers, A.A., 1993. Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence. Journal of Money, Credit and Banking, pp: 25.
4. Bjelica, V., 2001. Bankarstvo, teorija i praksa. Novi Sad: Buduænost Novi Sad.
5. Mishkin, F.S., 2010. Ekonomija novca, bankarstva i finansijskih tržišta. Zagreb: MATE, Zagreb.
6. Nauro, F. and F.K. Campos, 2018. Institutional integration and economic growth in Europe. Journal of Monetary Economics, May 2019, doi.org/10.1016/ j.moneco. 2018.08.001, 103: 88-104.
7. Jordan Kjosevski, M.P., 2017. Are the Determinants of Money Demand Stable in Selected Countries. Romanian Journal of Economic Forecasting, XX(4): 84.

8. Bildrici, Ö.E., 2017. A Nonlinear Analysis of Monetary Policy with Dominance Indices in Turkey. Romanian Journal of Economic Forecasting XX(4): 22.
9. Mark Gertler, P.K., 2011. A model of unconventional monetary policy. Journal of Monetary Economics, 58(1): 17-34.
10. Rose, P.S., 2003. Menadžment komercijalnih banaka. Zagreb: MATE Zagreb.
00. www.nbs.rs/internet/latinica/90/90_4/godisnji_izvestaj_2017.pdf,
00. www.cbbih.ba/State/Downloads/Fin.%20izvjestaji%20CBBIH%20za%202017%20eng(1).pdf
00. www.hnb.hr/documents/20182/2521149/e-gi-2017
00. www.bankaslovenije.blob.core.windows.net/publication-letno_porocilo_2017
00. www.nbrm.mk/content/Auditors-Report-and-Financial-Statements-NBRM-2017.pdf
00. www.bankofalbania.org/Publications/All_publications/Annual_Report_2017_English.html
00. www.cb-cg.org/slike/god_izv_finansijski_izv/cbcg_2017_fs.pdf
00. www.bnb.bg/bnbweb/groups/public/documents/bnb_publication/anual_report_2017_en.pdf
00. www.centralbank.com/2017-annual-report-downloadable-pdf